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The Commonwealth of Massachusetts

AUDITOR OF THE COMMONWEALTH

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A FINANCIAL EFFECT DETERMINATION OF MANDATORY RECYCLING ON MASSACHUSETTS CITIES AND TOWNS

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Office of the State Auditor

Division of Local Mandates
A. Joseph DeNucci, Auditor

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The Commonwealth of Massachusetts

AUDITOR OF THE COMMONWEALTH

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June 16, 1992

His Excellency William F. Weld, Governor
The Honorable William M. Bulger, President of the Senate
The Honorable Charles F. Flaherty, Speaker of the House of Representatives
The Honorable Robert A. Durand, Senate Chairman of the Joint Committee on Natural Resources
The Honorable Steven Angelo, House Chairman of the Joint Committee on Natural Resources
Honorable Members of the General Court

I am pleased to submit this review of the cost effect of a state mandated recycling program. This study was undertaken in accordance with G.L. c. 29, s. 27C(f), which allows the State Auditor's Division of Local Mandates to determine the financial effect of proposed laws impacting cities and towns.

The importance of having a safe and clean environment dictates that we must take protective action now. I certainly support the initiatives currently underway by the Administration and Legislature to establish mandatory recycling in cities and towns. At the same time, however, any efforts to do so must be reconciled with the mandate provision of Proposition 2 1/2 which requires state funding of any new legislative and regulatory mandates.

This report is intended to assist you in enacting a workable recycling law. It examines the methods and costs of existing municipal waste management services and projects the immediate cost impact of mandatory recycling on municipal budgets. I urge you to carefully address these funding issues.

I want to thank the many state and local officials, industry leaders and interested parties who participated in surveys and interviews, or in other ways contributed to this study. I hope the information in this report will be helpful to your efforts to improve the treatment and quality of the environment, especially in this time of fiscal constraints.

If you have any questions or need any additional information regarding this report, please contact Thomas Collins, Director of the Division of Local Mandates, at 727-0980. I look forward to continuing to work with you on this and other issues affecting the quality of state and local government and the services that the Commonwealth provides to its citizens.

Sincerely,

A. JOSEPH DeNUCCI
Auditor of the Commonwealth

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EXECUTIVE SUMMARY

This report of the State Auditor's Office, Division of Local Mandates (DLM), provides an estimate of the fiscal effect that mandatory recycling proposals would have in cities and towns throughout the Commonwealth. In recent years it has become apparent that recycling and composting of reusable components of the solid waste stream are a means to address environmental, economic, and public health concerns surrounding solid waste disposal in Massachusetts. To successfully implement such initiatives, however, Proposition 2 1/2 and the Local Mandate Law (G.L. c. 29, s. 27C) obligate the Commonwealth to either assume the costs a recycling law would impose on local units of government, or proceed with local option legislation.

To aid the General Court in drafting an enforceable, multi-material recycling law, this report examines the methods and costs of existing municipal waste management services, and projects the cost of tailoring existing practices to comply with state mandated recycling and composting.

Cities and towns use two basic methods of solid waste collection - - curbside pickup and drop-off centers. It is clear that population density is the most significant variable determining which method is used. A total of 158 cities and towns use curbside pickup, with a population per square mile averaging 2,347 persons. The remaining municipalities provide drop-off centers where individuals deliver or arrange for delivery of their own solid waste; the average population per square mile is 330 persons in these communities. In sum, about 80%, or 2.4 million tons, of the residential solid waste generated annually in Massachusetts is handled by curbside pickup communities, representing 45% of all cities and towns.

Experience with existing, voluntary local recycling programs indicates that municipalities using the drop-off method could incorporate mandatory recycling with little or no adverse budgetary impact. Only a few of those using the curbside method for recycling could do so without increases in waste management budgets. Accordingly, DLM focused its review on 23 curbside communities that have voluntarily initiated curbside recycling programs, and compared their estimated solid waste management costs without recycling to their costs with recycling. It should be noted that although these 23 communities currently represent the most active recyclers in the Commonwealth, none of them source separate the complete array of recyclable goods and materials targeted by the several mandatory proposals we have reviewed. A legislative mandate that includes a greater variety of materials would be an additional cost for these and other affected municipalities.

Nonetheless, this study shows that, contrary to popular expectations, savings from avoided disposal costs (not having to pay to landfill or incinerate tonnage diverted to recyclable use) and revenue from the sale of recycled materials do not commonly offset the additional costs of implementing and operating recycling programs.

The current fiscal situation indicates that substantial state financial assistance would be necessary to support a mandatory municipal program. A combination of an improved market for recyclables and increases in solid waste disposal costs over the next several years will dictate a more favorable climate. In the long run, recycling experts predict that the environmental and economic benefits of recycling to society, as a whole, will ultimately balance the investment required to institute effective recycling programs.

The highlights of our study results are as follows:

- Of the 23 communities we surveyed that have instituted curbside recycling and composting programs, 18 spent an aggregate $2.8 million more per year recycling. Individually, waste management cost increases ranged from 2% to 29%. On average, waste management costs for these 18 communities increased by $44 for each ton recycled or composted (diverted ton), or 11% of solid waste budgets, with one community's increased cost exceeding $94 per diverted ton.
- Recycling and composting reduced the solid waste management budget of 5 municipalities. Total savings for this subset of the sample was $695,724, or a savings of $27.40 per ton diverted. The average savings was 4.2% of municipal solid waste budgets.
- Based on recent cost data, all but a few of the 158 municipalities that provide curbside collection of solid waste will be required, at least in the short run, to spend additional funds to implement a mandatory recycling program.
- Communities that utilize drop-off centers are likely to realize cost savings.
- Markets for recyclable materials have not performed well and are not generating sufficient revenue to substantially reduce the cost of diversion. This condition will continue unless demand is stimulated. Also, the Bottle Bill has taken most aluminum and plastic, the major revenue sources, out of the municipal waste stream.

- Private industry contract bid prices for recycling pickup and reuse have escalated significantly, with recent bid prices averaging approximately $130 per ton compared to $90 per ton average cost in effect at the time of our survey.
- We estimate the short-term additional annual cost impact of mandatory recycling on all 158 curbside cities and towns to be within the range of $16.4 million to $30.6 million per year. The $16.4 million estimate is based on historical data, while the $30.6 million estimate applies the recent $130 per ton average contract price for pickup and diversion. Therefore, using a conservative approach, it is more likely that $30.6 million per year is required. The costs will be proportionately lower if all curbside municipalities are not mandated to establish recycling programs.
- Many communities may suffer additional financial losses because of existing long-term contracts that commit minimum tonnage deliveries to incinerators. In other words, tonnage diverted through recycling would still have to be paid for under these existing contracts.
- The percentage of material diverted from solid waste disposal to curbside recycling and composting from our sample was 22%(diversion rate).

We recommend:

1) That any mandatory recycling program initiated by the Commonwealth be funded sufficiently to prevent any adverse impact on local budgets. Based on our study, up to $30 million per year over the next few years would be necessary to mandate that all curbside collection cities and towns recycle.
2) If adequate state funding is not available, that the Commonwealth establish a voluntary program with state funding incentives. Our report shows the impact of partial state funding proposals and demonstrates the levels of participation that could be achieved at various levels of state funding.

INTRODUCTION

The Commonwealth of Massachusetts faces serious environmental, economic, and public health problems from disposal of solid wastes. Though cities, towns, and citizens are making concerted efforts to reduce, reuse and recycle, the Commonwealth does not have a law governing integrated solid waste management that provides guidelines to cities and towns concerning recycling and composting goals. In addition, the cost of municipal solid waste disposal is expected to increase as municipalities are required to close substandard facilities and to provide or to contract for disposal at state-of-the-art facilities.

In an effort to more effectively manage solid waste and promote environmentally and economically sound solutions to these problems, in 1991 the Legislature began to debate proposed bills that would provide the foundation for a comprehensive program of solid waste management in the Commonwealth.

Most all the bills filed required new municipal responsibilities. Therefore, during the 1991 Legislative Session, the House Chairman of the Joint Legislative Committee on Natural Resources and Agriculture asked the Division of Local Mandates (DLM) to review House No. 137, *An Act to Promote Recycling and Composting in the Commonwealth* "for possible mandates and financial costs that may be imposed upon cities and towns...." While this bill did not define the types and number of source-separated materials subject to recycling and composting requirements with the level of precision developed in more recent drafts, the basic elements are similar: newsprint; yard waste; certain plastic bottles and containers; certain metals, primarily cans; and glass.

Based on this request and numerous municipal petitions, DLM conducted a financial effect study on the costs of a mandatory recycling program.

DLM defined its task as follows:

- review any proposed legislation for possible mandates and financial costs that may be imposed on cities and towns;
- estimate the financial impact of mandatory source separation, recycling, and composting on municipal budgets;
- determine the need for grants to assist municipalities in coping effectively with mandatory recycling and composting.

Therefore, our cost analysis focuses on the immediate and direct budgetary impact of mandatory recycling on cities and towns, in light of the fiscal reality facing Massachusetts municipalities under the revenue-raising constraints of Proposition 2 1/2.

It should, however, be noted that the benefits of recycling to society, as a whole, are predicted to ultimately balance the investment required to institute effective recycling programs. These benefits include:

- conservation of raw materials;
- extending the useful life of disposal facilities;
- economic and environmental benefits related to lower energy consumption required to manufacture recycled products; and
- mitigation of health and environmental disadvantages related to solid waste disposal facilities.

For these and other benefits to be realized, the economics of recycling municipal solid waste indicate that state support of increased municipal costs is necessary until recycling becomes self-sustaining from a budgetary point of view. Proposition 2 1/2 requires that the Commonwealth assume the full local expense of new state mandates. Therefore, this study is intended to advise the General Court of the estimated amount of state funding cities and towns will need to accomplish legislative goals.

METHODOLOGY

To meet the objectives of this study, DLM:

- reviewed and analyzed existing cost data provided by the Massachusetts Department of Environmental Protection (DEP);
- conducted a general informational survey of municipalities with recycling programs in the Commonwealth to determine their current waste disposal practices;
- surveyed a selection of cities and towns with drop-off recycling programs;
- conducted a detailed cost study of 23 municipalities that employ curbside pickup for recycling programs; and
- discussed the factors that affect recycling with legislative leaders, their staff, waste industry officials, recycling proponents and other state and local officials, as warranted.

We found that existing data about current practices and costs of municipal solid waste management was limited. Municipalities differ considerably as to how they account for the full costs of solid waste management (e.g., landfill assessment and closure costs). Widespread recycling and composting are relatively new to many Massachusetts municipalities and, therefore, the characteristics of such programs have changed rapidly. The costs of those programs vary with their specifics, as well as with whether the municipality has had sufficient experience with a particular program to take advantage of its efficiencies. While DEP shared with us data based on both surveys and consultant studies in the fall of 1991, we felt it was important to obtain more recent and complete information.

As a result, we created our own computer database about solid waste practices in the Commonwealth. From this database of municipal solid waste management information, we could then construct a model that would simulate the financial impact of mandatory source separation, recycling, and composting on municipal budgets.

We began with a preliminary review of the data given us by DEP about the types of solid waste management systems used by the 351 Massachusetts cities and towns. After verifying the information, we identified 158 municipalities that already use curbside pickup for solid waste. From these 158 municipalities we selected 23* (8 cities, 15 towns) that have implemented recycling programs with curbside pickup

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** 15 of the 23 also provide curbside pickup of yard waste.*

in addition to the curbside collection of solid waste. DLM's statewide cost estimate is based on a detailed analysis of the solid waste management costs of these 23 cities and towns. Many of these recycling programs were instituted at local option out of concern for conservation of energy and natural resources. Some were based on the premise that the cost of recycling would be fully offset by savings realized from avoided disposal costs. It should be noted that although these 23 communities currently represent the most active recyclers in the Commonwealth, none of them source-separate the complete array of recyclable goods and materials targeted by the several mandatory proposals we have reviewed.

Although we also surveyed 20 municipalities with drop-off recycling programs, we did not use data from drop-off communities in our computer model. Early analysis of survey data suggested that mandatory recycling will not impose increased costs on those communities with drop-off solid waste systems because there is no additional collection cost. The economic advantages of drop-off systems are generally great enough to ensure that adding recycling to solid waste disposal will not cost more than disposal alone. The costs of providing equipment and staff are offset by the avoided disposal costs or by extending the life of local landfills. Drop-off towns will need loans from the state for the cost of starting up recycling programs. Loans could be repaid by savings from reduced solid waste costs.

Therefore, we concentrated on only those municipalities with curbside programs because increases in solid waste management costs due to recycling will occur almost exclusively in cities and towns using this method.

Our survey was designed to gather detailed information about the cost of solid waste management practices. During the fall of 1991, DLM staff made personal visits to the municipalities surveyed. After interviews with various local officials involved in the municipality's solid waste management program, there was follow-up by phone and mail to clarify the information. In addition, respondents were asked to provide copies of contracts with private waste management firms.

DLM developed a 6-component model to demonstrate marginal costs and to make cost projections. This approach allows for manipulation of variables and assumptions about interrelationships between variables. The model was designed to be adaptable to a variety of legislative and/or regulatory scenarios.

The primary components of our computer model were:

- collection and hauling costs;
- tipping costs;
- recycling costs;
- composting costs;
- total solid waste management costs without recycling; and
- total solid waste management costs with recycling.

6-Component Model

SOLID WASTE COSTS WITHOUT RECYCLING						SOLID WASTE COSTS WITH RECYCLING								
CITY/ TOWN	COLLECTION & HAULING COSTS	+	TIPPING COSTS	=	TOTAL COST WITHOUT RECYCLING & COMPOSTING	RECYCLING COSTS	+	COMPOSTING COSTS	+	COLLECTION & HAULING COSTS	+	TIPPING COSTS	=	TOTAL COST WITH RECYCLING & COMPOSTING

Figure 1

SURVEY RESULTS

Our research indicates that there are a number of variables that significantly affect the costs of recycling and composting for municipalities. These variables, which will be discussed in detail with graphs and charts, are as follows:

1) Method of solid waste collection;
2) Population density of the municipality;
3) Type and number of source-separated materials;
4) Market for recycled materials; and
5) Avoided solid waste costs.

METHOD OF SOLID WASTE COLLECTION

The collection system used by a municipality for solid waste and recyclables is a key condition in determining whether recycling will increase or decrease municipal costs. There is substantial diversity in the solid waste collection systems throughout the Commonwealth. Systems range from curbside pickup for trash, recyclables, and yard waste to a simple system of trash drop-off only.

Figure 2 depicts curbside and drop-off municipalities and population figures for both groups.

In those 23 cities and towns that provide curbside recycling, we observed that solid waste management budgets generally increase when recycling is introduced to supplement usual disposal methods. Our review of data from 20 municipalities with the drop-off system indicates that these programs generally result in a budget reduction for solid waste management.

There are advantages and disadvantages from a cost-benefit perspective of both drop-off and curbside collection systems. Recycling programs that expect individuals to take recyclables to a drop-off center have a cost advantage over curbside programs because a system of separate collection and/or containers for recyclables and yard waste is not required.

Curbside collection systems, on the other hand, require additional labor and equipment to sort, collect, and transport the material. However, in return for the higher costs, curbside programs have the added benefit of higher participation rates and, therefore, greater amounts of solid waste can be diverted to recycling. For the purposes of this study, we have assumed that the 158 municipalities currently providing

Waste Collection Methods in Massachusetts

Curbside and Drop-off Municipalities

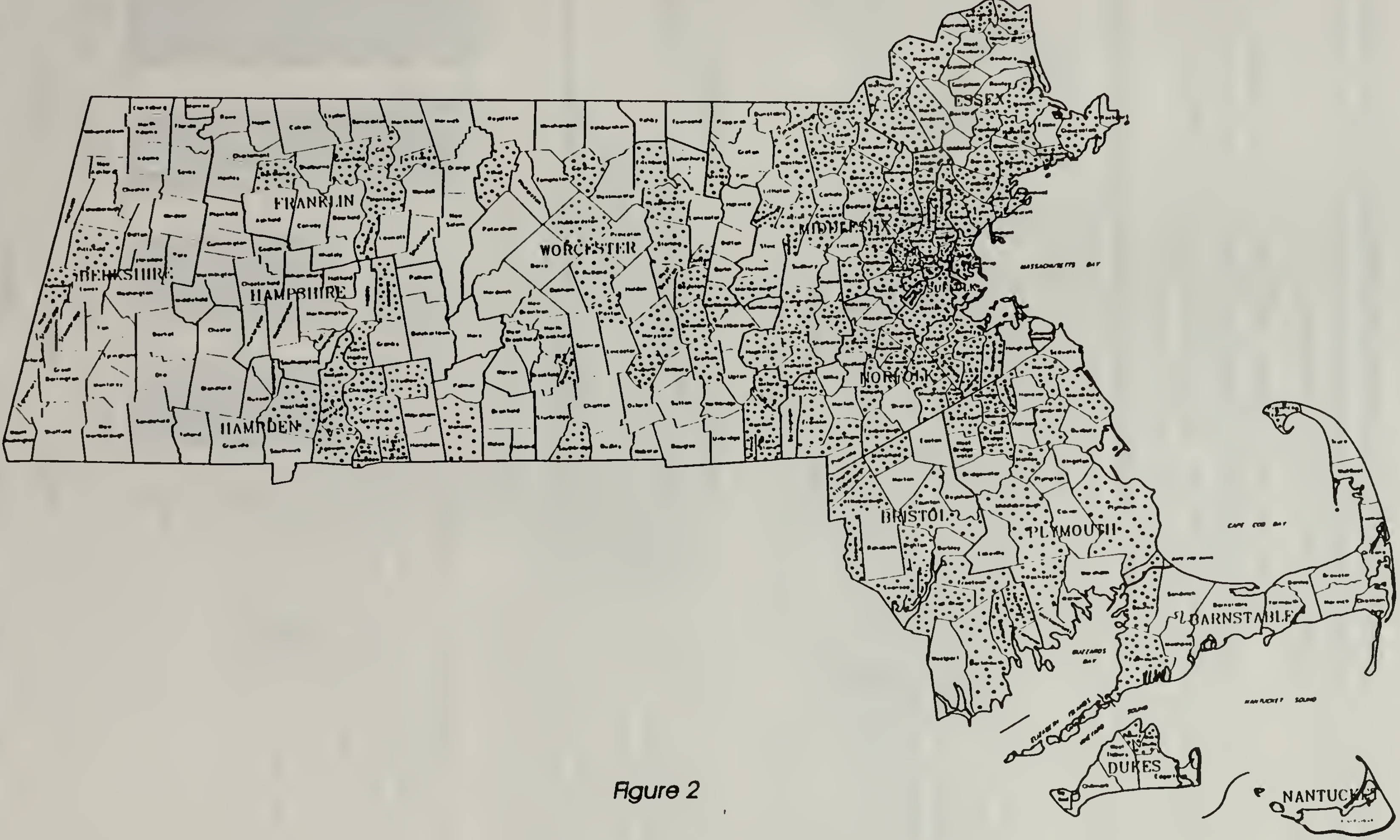


Figure 2

☐ Drop-off: 193 cities & towns serving 20.5% of the population *(1,232,221)*

▨ Curbside: 158 cities & towns serving 79.5% of the population *(4,784,204)* curbside pickup will also collect recyclables and yard waste at the curb at the following diversion rates: recycling 15% of waste stream; composting 10% of waste stream.

Figure 3 shows hypothetically how recycling impacts those communities with curbside compared with those communities with drop-off collection systems. In particular, the drop-off sample shows that

Hypothetical Solid Waste Management Budgets

		DROP-OFF EXAMPLE		CURBSIDE EXAMPLE	
		WITH NO RECYCLING	WITH RECYCLING	WITH NO RECYCLING	WITH RECYCLING
TONS =	A	5,000	4,500	5,000	4,500
* COLLECTION & HAULING =	B	$0	$0	$30	$33.33
* TIP =	C	$50	$50	$50	$50
RECYCLING TONS =	D	0	500	0	500
COST PER RECYCLING TON =	E	$0	$20	$0	$90
FORMULA =		A(B+C)	A(B+C)+(DxE)	A(B+C)	A(B+C)+(DxE)
TOTALS		$250,000	$235,000	$400,000	$419,985

* NOTE. COST PER TON

RESULTS		*RESULTS*	
Savings Realized	$15,000	Additional Cost	$19,985
Savings per Total Tons	$3	Additional Cost per Total Tons	$4
Savings per Recycled Ton	$30	Additional Cost per Recycled Ton	$40

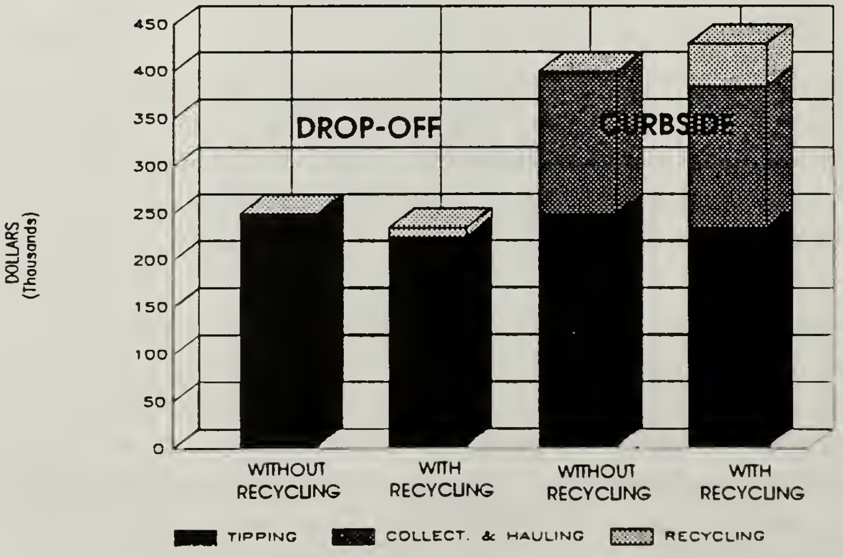


Figure 3

$15,000 would be saved even if the town received zero net revenue from the sale of recycled material after processing and transportation. Any net revenue above zero would, of course, increase the economic advantages of recycling.

Using the same methodology for curbside collection, the example illustrates the opposite impact. Instead of being less expensive, recycling is more expensive than disposal alone. Before recycling, the solid waste management budget is $400,000. With an integrated system of disposal and recycling, the total tipping cost is reduced by $25,000 because 500 tons are diverted from the disposal facility.

However, the total solid waste curbside collection cost remains the same, thereby increasing the per-ton collection cost to $33.33. Cost for the 500 tons recycled is $90 per ton, the average recycling cost from DLM's survey. The resulting $45,000 in recycling collection costs is greater than the savings in tipping fees of $25,000, resulting in a cost increase of almost $20,000 without including recycling revenues. Break-even would require revenue from the sale of material of $40 per ton -- net of transportation and separation costs.

POPULATION DENSITY

Population density is an important variable in determining the selection of an efficient and effective solid waste collection system. Curbside collection is usually indicated in urban areas where the streets and buildings are close together. The lower population density of rural towns usually cannot support the cost of curbside collection. Suburban areas can fall into either category, but the tendency is toward curbside collection.

Population density in the group of 158 curbside municipalities averages 2,347 residents per square mile -- 7 times the 330 residents per square mile density of drop-off municipalities. The population per road mile is almost 3 times higher than the drop-off group. The 23-municipality sample, as a subset of the curbside category, is even more densely populated at 3,040 residents per square mile. Almost one million people, one-sixth of the state population, reside in these 23 cities and towns.

Figure 4 compares the averages for population, per capita income, equalized valuation, and budget for the 23-sample group with the drop-off, curbside, and 351 cities and towns.

Comparative Sample Data

	POPULATION	AVERAGE POPULATION	POPULATION PER SQUARE MILE	POPULATION PER ROAD MILE	INCOME PER CAPITA	EQV PER CAPITA	BUDGET PER CAPITA
23 DLM SAMPLE	962,979	41,869	3,040	314	16,297	78,645	1,585
158 CURBSIDE	4,784,204	30,280	2,347	278	15,215	78,141	1,462
193 DROP OFF	1,232,221	6,385	330	100	14,220	115,232	1,382
351 CITIES AND TOWNS	6,016,425	17,141	1,238	180	14,668	98,536	1,418

Figure 4

Almost 80% of Massachusetts residents live in the 158 communities that provide curbside pickup of solid waste. Based on DLM's survey, the EPA-sponsored Franklin study, and input from regulatory officials and industry, we assumed 80% of the solid waste collected in Massachusetts is generated in these 158 municipalities. The 193 drop-off municipalities (20% of the population) generated only 600,000 tons of the estimated 3 million tons of Massachusetts residential solid waste.

TYPE AND NUMBER OF SOURCE-SEPARATED MATERIALS

Clearly, the scope of goods and materials targeted by any mandatory recycling program would affect the cost to municipalities. As mentioned earlier, none of the 23 communities currently handling recyclables at curbside divert the full variety of items identified in existing draft legislation. While this distinction complicates our effort to simulate statewide costs from the sample data, in the aggregate, the sample communities handle most of the targeted items.

For example, all 23 recycle newsprint and glass, and all but one divert cans and leaves from solid waste disposal. Nineteen municipalities source-separate aluminum, while 13 recycle plastics to various extents. Where various legislative drafts would require more precise separation of types of metals, plastics, and glass, local costs would vary from the experience of the sample communities. Nonetheless, the use of sample data is the best available reasonable basis for estimating statewide costs at this time.

MARKET FOR RECYCLABLES

At the moment, the market for recycled materials is depressed. A turnaround in this trend would help offset the cost of collecting recyclables. DLM did not attempt to predict the future value of recyclables, but recycling literature suggests that there will be an oversupply of this material until demand can be stimulated. This situation will tend to hold down market prices, at least temporarily. Several recycling collection and material wholesaling firms consulted by DLM indicated that demand for recycled material is very weak.

Although DLM's survey asked for information concerning the market value of recycled materials, none of the municipalities sampled participate in the recycled material market. Of the 23 municipalities, 14 are under contract with collection firms that assume the risks of the marketplace for recovered materials.

Nine of the 23 municipalities have agreements with the state-sponsored Springfield Materials Recovery Facility (SMRF). The purpose of MRF plants is to add value to source-separated materials, delivered primarily from municipal recycling programs, and sell them in the most usable form for the highest price to purchasers of recycled materials. The state and the SMRF vendor share the profits or losses from the sale of materials until 1994, when cities and towns will take over responsibility for SMRF financing.

AVOIDED SOLID WASTE COSTS

Our survey data and review of collection contracts, with input from representatives of the solid waste industry, municipalities, and other states, indicates that the fixed costs of solid waste collection are relatively unresponsive to changes in the volume of solid waste collected.

The average recycling diversion rate of Massachusetts municipalities with curbside recycling is approximately 15%, plus 7% for composting for a total of 22%. Our research confirms that those municipalities that recycle have not experienced a corresponding reduction in solid waste collection costs (except Newton - see page 16). One reason for this is that the fixed costs of covering the collection route and the number of stops along the route does not change because of recycling. If the average household reduces its solid waste generation of 2 bags per week by 15%, the household still puts out 1.7 bags to be collected.

A Rhode Island official indicated that a 15% reduction in solid waste generation can allow one truck to be taken out of service only in municipalities over 80,000 in population. This factor should be a negotiating point in future solid waste collection contracts. In fact, here in Massachusetts, the City of Newton has pioneered unit pricing ($ per ton) for solid waste collection services. Newton's contract is being studied by DEP as a possible model for other cities and towns. Nevertheless, in estimating the short-term impact of mandatory recycling, it is safer to assume that solid waste collection costs will be relatively unresponsive to reductions in the volume of waste collected.

Financial Impact of State Mandated Recycling and Composting

Figure 5 provides a summary of data from the 23-municipality sample without recycling and with recycling and composting. It also simulates the financial impact of mandated recycling and composting for individual cities and towns, and in the aggregate. The following findings are based on solid waste, recycling, and composting costs, and diversion rate information gathered by DLM. (The "put or pay" issue is not reflected in these findings):

- In 18 of the 23 municipalities with curbside recycling programs, recycling increases municipal solid waste management costs because recycling collection costs exceed the combined total of avoided disposal costs and revenue from the sale of source-separated recyclables, if any.
- Recycling and composting reduced the solid waste management budget of 5 municipalities. Total savings for this subset of the sample was $695,724, or a savings of $27.40 per ton diverted.
- Solid waste management budgets increase for the other 18 municipalities in the sample. The cost increase per diverted-ton for this group ranges from $12 to $94; the weighted average is a $43.90 increase for each ton diverted from the solid waste stream. **The total cost increase for this group of 18 is $2.8 million per year.**

To estimate the statewide cost impact of mandatory recycling, DLM applied several key coefficients, derived from the 23-municipality sample, to all curbside collection municipalities. These coefficients are "per-ton" costs for solid waste collection, recycling collection and processing, and yard waste collection and composting costs. Actual per-ton disposal costs were used for each city and town. Although this analysis will not yield an exact municipality-by-municipality cost because actual per-ton costs vary, it gives a good indication of estimated annual cost impact.

Solid Waste Management Analysis - 23 Curbside Recycling Municipalities*

*Source: DLM Survey

	SOLID WASTE COST WITHOUT RECYCLING			SOLID WASTE COST WITH RECYCLYING AND COMPOSTING					RECYCLING AND COMPOSTING FINANCIAL IMPACT		
MUNICIPALITY	**SOLID WASTE COLL./HAUL COST**	**TOTAL TIP COST**	**TOTAL COST WITHOUT RECYC. OR COMP.**	**SOLID WASTE COLL./HAUL COST**	**TOTAL TIP COST WITH REC. AND COMP.**	**RECYCLING COST**	**COMPOST COST**	**TOTAL REC\COMP AND SW COST**	**COSTS**	**SAVINGS**	**% CHANGE SOLID WASTE COST**
AGAWAM *	$311,052	$389,932	$700,984	$311,052	$284,210	$251,726	$14,513	$661,501	$160,517		23%
ANDOVER	420,500	928,091	1,348,591	420,500	737,429	127,775	14,000	1,299,704		($48,887)	-4%
BEDFORD	305,600	462,981	768,781	305,600	372,681	103,183	6,900	788,564	19,783		3%
BELMONT	516,123	1,168,740	1,684,863	516,123	988,140	129,000	87,700	1,720,963	36,100		2%
BEVERLY **	682,500	1,274,700	1,957,200	682,500	1,028,700	233,100	180,000	2,124,300	167,100		9%
BROOKLINE	714,000	1,781,129	2,495,129	714,000	1,495,490	257,250		2,466,740		(28,389)	-1%
CAMBRIDGE	1,584,565	2,024,000	3,608,565	1,564,565	1,748,000	571,555		3,904,120	295,555		8%
CHICOPEE *	525,000	686,032	1,211,032	525,000	809,960	344,962		1,479,922	268,890		22%
EAST LONGMEADOW *	141,500	175,340	316,840	141,500	122,738	144,190		408,426	91,588		29%
FRAMINGHAM	1,117,000	1,788,232	2,905,232	1,117,000	1,328,684	457,500	83,558	2,966,742	61,510		3%
GREENFIELD	319,100	288,315	607,415	319,100	225,511	80,200	10,350	635,161	27,746		5%
HOLYOKE *	385,824	993,250	1,376,874	385,824	870,000	171,700		1,427,324	48,450		4%
LEXINGTON	715,000	1,021,809	1,736,809	715,000	686,409	130,000	120,000	1,651,409		(85,400)	-5%
LUDLOW *	290,000	312,823	602,823	290,000	211,205	140,600	51,245	693,050	90,228		15%
NEWTON	2,370,368	2,453,696	4,824,064	1,693,120	1,752,640	486,780	360,360	4,292,900		(531,164)	-11%
PITTSFIELD *	761,000	450,515	1,211,515	761,000	365,675	420,388	18,663	1,565,726	354,211		29%
READING **	362,923	610,080	973,003	362,923	512,160	168,774		1,043,857	70,854		7%
RICHMOND *	37,946	53,697	91,643	37,946	46,827	10,474		95,247	3,604		4%
SPRINGFIELD * ***	1,988,025	2,323,574	4,311,599	1,988,025	1,892,675	1,081,600	62,000	5,024,700	713,101		17%
SWAMPSCOTT **	161,493	430,320	591,813	161,493	370,320	79,600		611,413	19,600		3%
TEWKSBURY	450,000	834,759	1,284,759	450,000	757,875	50,000	25,000	1,282,875		(1,884)	-0.15%
WEST SPRINGFIELD *	240,000	434,365	674,365	240,000	318,800	196,600	22,100	777,500	103,135		15%
WEYMOUTH	739,500	1,318,600	2,056,100	739,500	851,250	364,560	327,600	2,282,910	226,610		11%
TOTAL	$15,139,019	$22,202,979	$37,341,998	$14,461,771	$17,577,579	$6,001,717	$1,383,989	$39,425,056	$2,778,782	($695,724)	
TONS	434,785			346,097		66,627	22,061	434,785	63,293	25,395	
COST PER TON	$34.82	$51.07	$85.89	$41.79	$50.79	$90.08	$62.73	$90.68	$43.90	($27.40)	

NOTES.

*A. * SPRINGFIELD MATERIALS RECOVERY FACILITY (SMRF).*

B. $42 PER TON PROCESSING FEE ADDED TO SMRF RECYCLING COSTS.

*C. ** RESCO $60 TIPPING FEE INCLUDES CURRENT FEE AND AMORTIZATION OF SCRUBBER COSTS.*

D. ANALYSIS DOES NOT INCLUDE UNDERAGE OR LOST ENERGY PENALTY COSTS.

*E. *** PRELIMINARY RECYCLING COST DATA PROVIDED BY MUNICIPALITY. REVISED DATA UNAVAILABLE AT REPORT ISSUE DATE.*

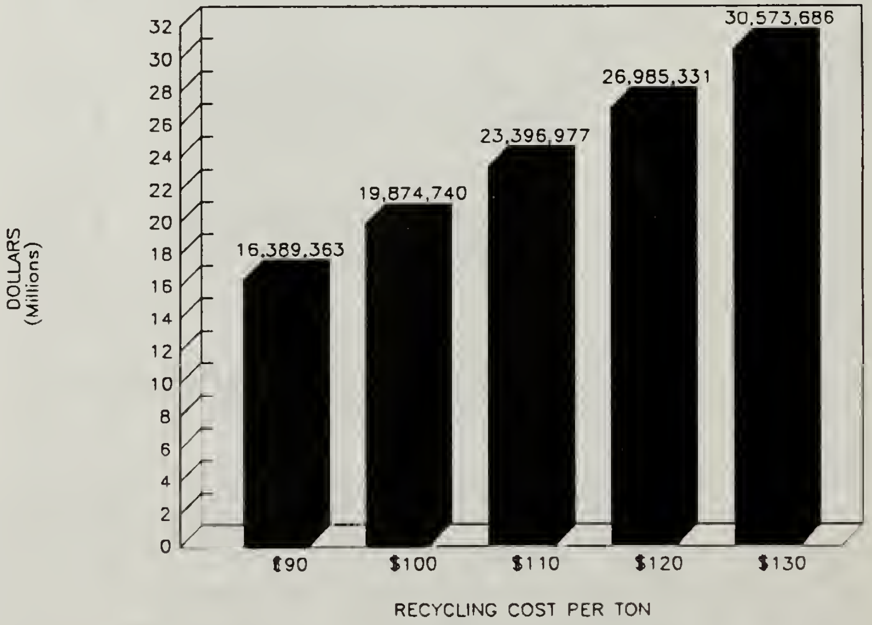
Figure 5

The average cost for curbside collection of recyclables for the 23-municipality sample was $90 per ton. The $90 average includes 18 multi-year recycling collection contracts in effect at the time of DLM's survey. Recent low bids for recycling-collection services indicate that current recycling costs are significantly higher. Costs in the 23 cities and towns ranged from $41 to $137 per ton. The data indicates that 5 of the 23 find that recycling is less costly than disposal alone. For this group of 5, the savings is $695,724, which means solid waste costs, on average, would go down 4.2%. For the other 18 municipalities in the 23-sample group, solid waste costs would increase an average of 11%. The increase in costs ranged from 2% to 29%. The increase for these 18 would amount to $2.8 million. Based on the 63,293 tons recycled and composted, each ton increases the overall solid waste management budget by $43.90 per ton.

Figure 6 shows the fiscal impact for the group of 158 cities and towns at the $90 per ton recycling costs derived from the 23 municipality sample and at the higher rates expected during the first few years of statewide

Estimated Solid Waste Cost Increase with Recycling*

**158 Curbside Muncipalities*



Tables to support the calculations in Figure 6 may be found in the Appendix.

Figure 6

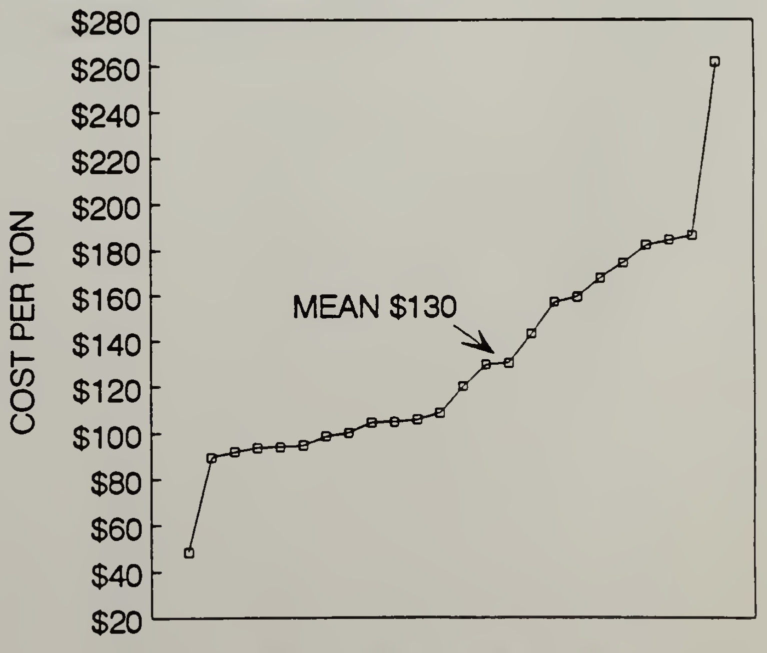
mandatory recycling. If all the 158 municipalities employ curbside collection, annual solid waste management costs will increase by $16.4 million (at $90 per ton) to $30.6 million (at $130 per ton), depending on the prevailing cost of providing recycling services at the time the recycling programs are implemented. The high end of the range ($130 per ton) in *Figure 6* is based on information provided by the recycling industry.

The Massachusetts Chapter of the National Solid Waste Management Association has compiled a list of low-bid prices received by municipalities in response to requests for proposal during 1991 and 1992. *Figure 7* charts the estimated costs per ton of providing recycling collection and reuse services. The average of these 24 low bids is $130 per ton.

Assuming that the $130 per ton average contract price is the prevailing rate on the effective date of state mandated recycling, the municipal cost impact will be $30.6 million.

Estimated Cost per Ton Based on Low Bids for Municipal Curbside Recycling Collection Services

1991 - 1992



SOURCE: National Solid Waste Management Association.

Figure 7

TONNAGE GUARANTEE ISSUE

DLM found that the tonnage guarantee, the so-called "put or pay" issue, is currently adversely affecting the recycling economics of 11 sampled communities under contract with the Springfield and the North Andover trash-to-energy facilities. "Put or pay" clauses require these communities to pay for a guaranteed amount of solid waste tonnage, even when actual deliveries fall short of the guarantee. As a result of mandatory recycling, these cities and towns would not only pay to recycle, but would also pay the incineration facilities for tonnage not delivered.

The 11 municipalities in DLM's 23 city and town sample are currently responsible for paying $1.8 million for solid waste tonnage guaranteed under contract but not delivered. The underage due to the economic downturn has been factored out of this figure. A similar impact can be imposed on the remaining 22 cities and towns under contract with these two facilities if mandatory statewide recycling becomes a reality. The total impact for these two plants alone would be $5.4 million annually.

Unless the "put or pay" issue is resolved through negotiations between the parties, this provision will continue to penalize these municipalities relative to others. The shortage of tons created by mandatory recycling may force other facilities to activate "put or pay" provisions, further exacerbating the problem.

DLM's cost analysis does not factor these costs into our estimates.

IMPACT OF THE CONTAINER REDEMPTION LAW

In resale potential, aluminum and plastic are the most valuable components of municipal solid waste. The market price for recycled aluminum cans in 1991, for example, was between $700 and $900 per ton. The Massachusetts beverage container redemption law has removed a major source of this high-value material from the residential waste stream. About 75% of five-cent deposit containers are recycled directly by a corporation created by beverage distributors. As a result, the value of materials available to municipal recycling programs in Massachusetts is lower than in states without deposit laws such as Rhode Island.

DLM compared calendar year 1991 revenue data for materials recovery facilities (MRF) in Springfield, Massachusetts and Johnstown, Rhode Island. The Springfield and Johnstown MRFs sold roughly the same amount of material in 1991 -- 45,800 and 42,800 tons respectively. However, the market value of the Rhode Island MRF recovered material is about 3.5 times higher than that of the Springfield MRF. The main reason for this is that the Johnstown MRF processes a higher proportion of aluminum and plastic because Rhode Island has not enacted a bottle and can redemption law.

Figure 8 breaks the total saleable output of both facilities into several categories with tonnage, market price, and revenue statistics for each type of material. Note that aluminum brings in almost 53% of non-paper revenue, yet represents only 6% of non-paper tons sold by the Rhode Island plant. At the Springfield facility, aluminum represents only 1% of the non-paper tonnage, bringing in 19% of non-paper revenue.

Figure 8 also contrasts the weighted-average revenue per ton for the two facilities. The lower proportion of high-value materials available to the Massachusetts MRFs due to the bottle redemption law is the primary factor in the large differential for non-paper materials. As a result, the Rhode Island MRF's average market value per ton of $33.77, based on total output, is 3.5 times greater than that of the Massachusetts MRFs at $9.03 per ton.

It should be noted that a Rhode Island tax on products packaged in bottles and cans is dedicated to paying off bonds sold by the quasi-public Rhode Island Solid Waste Management Corporation. These bonds finance solid waste infrastructure, planning, and recycling start-up cost subsidies for cities and towns.

In Massachusetts, a potential source of funding related to the bottle and can redemption law has been established to support municipal recycling programs. Unredeemed bottle and can deposits are estimated to represent $21 million annually. Chapter 653, Section 70 of the Acts of 1989 stipulates that these deposits are unclaimed property that belongs or "escheats" to the state. The bottling industry has challenged this claim and the issue is before the courts.

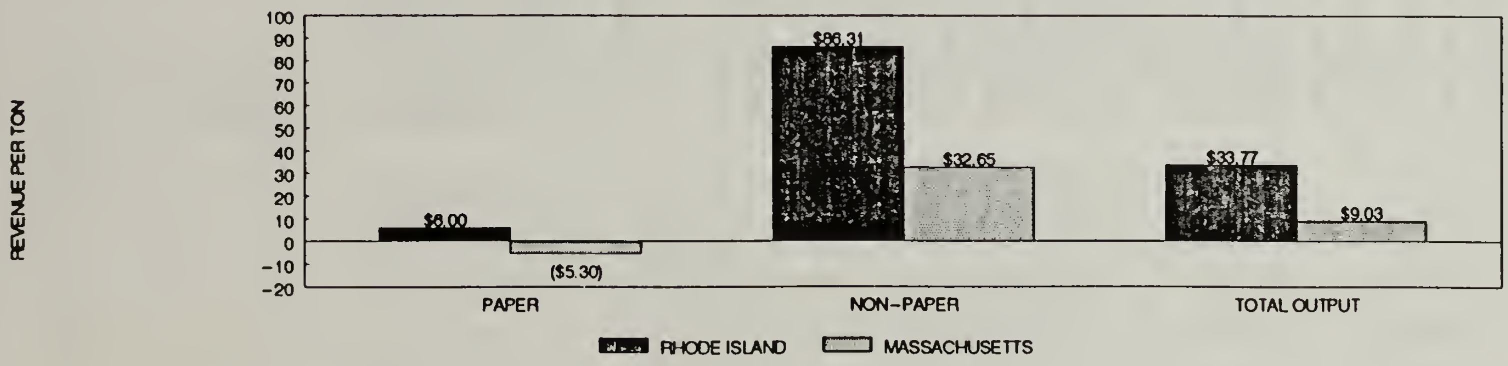
The Clean Environment Fund was created by Sections 235 to 237 of Chapter 653 to pay for recycling, composting, and source-separation projects and programs. It provides that between January 1, 1990 and June 30, 1994, an ascending portion of the unclaimed deposits, or "escheatage" is to be deposited in the Fund. The remaining portion is deposited in the General Fund until Fiscal Year 1995, when all deposit escheatage is credited to the Clean Environment Fund.

It is not clear at this time if Massachusetts cities and towns would derive greater benefit from the Clean Environment Fund than from the market value of recycled bottles and cans. If the Clean Environment Fund legislation is successfully challenged, then amendments to the Bottle Bill may be a necessary requisite to the success of mandatory recycling in Massachusetts.

Market Price Comparison Recovered Materials

Rhode Island and Massachusetts

JOHNSTON, RHODE ISLAND					RECYCLING FACILITY	SPRINGFIELD, MASSACHUSETTS				
% OF REVENUE	REVENUE	PRICE	% OF TONS	TONS	MATERIALS	TONS	% OF TONS	PRICE	REVENUE	% OF REVENUE
100%	$167,820	$6.00	100%	27,970	PAPER PRODUCTS	28,526	100%	($5.30)	($151,188)	0.00%
20.12%	$256,621	$29.00	59.87%	8,849	GLASS	5,491	31.73%	$52.90	$290,474	51.41%
26.45%	$337,400	$175.00	13.04%	1,928	PLASTICS	249	1.44%	$91.58	$22,803	4.04%
0.77%	$9,844	$3.13	21.28%	3,145	TIN METAL	5,054	29.20%	$27.30	$137,974	24.42%
52.66%	$671,814	$783.00	5.81%	858	ALUMINUM	137	0.79%	$720.00	$98,640	17.46%
NA	NA	NA	NA	NA	ALUMINUM FOIL	42	0.24%	$227.00	$9,534	1.69%
NA	NA	NA	NA	NA	AGGREGATE CULLET	6,266	36.21%	$0.67	$4,196	0.74%
NA	NA	NA	NA	NA	STEEL SCRAP	67	0.39%	$20.20	$1,353	0.24%
	$167,820	$6.00		27,970	PAPER TOTAL	28,526		($5.30)	($151,188)	
	$1,275,679	$86.31		14,780	NON-PAPER TOTAL	17,306		$32.65	$564,977	
	$1,443,499	$33.77		42,750	PAPER AND NON-PAPER TOTAL	45,632		$9.03	$413,789	



SOURCE RHODE ISLAND SOLID WASTE MANAGEMENT CORPORATION MARKET REVENUE DETAIL AND RESOURCE RECOVERY SYSTEMS INC. YEAR END REPORT.

Figure 8

FUNDING MECHANISM

Draft legislation made available to DLM by the Joint Legislative Committee on Natural Resources and Agriculture and the Executive Office of Environmental Affairs (EOEA) contains a provision to base state funding on increased costs per ton diverted from disposal. DLM has analyzed the impact of the "capped marginal cost per diverted ton" (See *Figure 6.*)

The analysis in *Figures 9A - 9E* is based on the premise that municipalities with marginal costs per diverted ton, at or below the per-ton funding cap, will either establish or continue recycling programs. Where recycling costs per diverted ton exceed the cap, capped state funding will be an incentive to optional compliance with recycling legislation.

For example, the estimated cost increase for 158 curbside municipalities is $30.6 million, at an assumed recycling cost of $130 per ton. Since it is estimated that drop-off municipalities would incur little, if any, additional costs, loans from the state for start-up costs would result in mandatory recycling in all drop-off communities with a total estimated population of 1.2 million. State grant funding at $55 per diverted ton would assume local cost increases for 101 curbside cities and towns, population 3.1 million (See *Figure 9E.* on page 27.) This would result in 72% of the population (4.3 million residents) participating in mandatory recycling. **This 72% participation rate would cost the Commonwealth approximately $15.4 million, plus the cost of the loan program.**

Fifty-seven cities and towns have marginal costs above $55 per ton. Should the Commonwealth offer incentive funding to these municipalities at the same $55 per diverted ton level, these cities and towns would be eligible for state grants, if they agree to fund amounts above the cap, estimated at $3.53 million. State funding of $11.6 million would be required to provide incentive grants to all of these 57 high-marginal costs municipalities. Total **potential** state grant funding at $55 per ton would be $27 million.

Estimated Marginal Cost of Recycling for 158 Curbside Municipalities

@ $90/TON RECYCLING COST =$16,389,363

	MANDATE FUNDING			INCENTIVE FUNDING				
$ CAP PER DIVERTED TON	NO.OF MUNS. MARG.$ < CAP	POP/ (% OF CURBSIDE)	STATE $	NO.OF MUNS. MARG.$ > CAP	POP.	STATE $	LOCAL $	TOTAL POTENTIAL STATE $
$25	101	3,097,462 (65%)	$6,315,161	57	16,870,11 (35%)	$5,271,910	$4,802,292	$11,587,071
$35	111	3,434,900 (72%)	7,741,178	47	1,349,573 (28%)	5,904,382	2,743,803	13,645,560
$45	121	3,918,269 (82%)	10,218,730	37	866,204 (18%)	4,872,398	1,298,235	15,091,128
$55	140	4,296,916 (90%)	12,714,351	18	487,557 (10%)	3,351,955	323,057	16,066,306
$65	157	4,780,552 (100%)	16,350,598	1	3,921 (0%)	31,858	6,907	16,382,456

Figure 9A

Estimated Marginal Cost of Recycling for 158 Curbside Municipalities

@ 100/TON RECYCLING COST =$19,874,740

	MANDATE FUNDING			INCENTIVE FUNDING				
$ CAP PER DIVERTED TON	NO.OF MUNS. MARG.$ < CAP	POP/ (% OF CURBSIDE)	STATE $	NO.OF MUNS. MARG.$ > CAP	POP.	STATE $	LOCAL $	TOTAL POTENTIAL STATE $
$25	63	1,529,736 (32%)	$3,370,315	95	3,254,737 (68%)	$10,171,053	$6,333,372	$13,541,368
$35	101	3,097,462 (65%)	8,535,281	57	1,687,011 (35%)	7,380,673	3,958,786	15,915,954
$45	111	3,434,900 (72%)	10,214,376	47	1,349,573 (28%)	7,591,348	2,069,016	17,805,724
$55	121	3,918,269 (82%)	13,054,455	37	866,204 (18%)	5,955,153	865,132	19,009,608
$65	152	4,532,917 (95%)	17,718,149	6	251,556 (5%)	2,043,893	112,698	19,762,042
$75	157	4,780,552 (100%)	19,833,034	1	3,921 (0%)	36,759	4,947	19,869,793

Figure 9B

Estimated Marginal Cost of Recycling for 158 Curbside Municipalities

@ 110/TON RECYCLING COST =$23,396,977

	MANDATE FUNDING			INCENTIVE FUNDING				
$ CAP PER DIVERTED TON	NO.OF MUNS. MARG.$ < CAP	POP/ (% OF CURBSIDE)	STATE $	NO.OF MUNS. MARG.$ > CAP	POP.	STATE $	LOCAL $	TOTAL POTENTIAL STATE $
$25	15	389,445 (8%)	$706,183	143	4,395,028 (92%)	$13,734,464	$8,956,330	$14,440,647
$35	100	3,062,234 (64%)	10,633,328	58	1,722,239 (36%)	7,534,796	5,228,853	18,168,124
$45	101	3,097,462 (65%)	10,792,259	57	1,687,011 (35%)	9,489,438	3,115,280	20,281,697
$55	120	3,748,510 (78%)	14,735,288	38	1,035,963 (22%)	7,122,246	1,539,443	21,857,534
$65	127	4,024,960 (84%)	16,755,836	31	759,513 (16%)	6,171,044	470,097	22,926,880
$75	155	4,674,803 (98%)	22,346,499	3	109,670 (2%)	1,028,156	22,322	23,374,655
$85	157	4,780,552 (100%)	23,352,331	1	3,921 (0%)	41,661	2,985	23,393,992

Figure 9C

Estimated Marginal Cost of Recycling for 158 Curbside Municipalities

@ 120/TON RECYCLING COST =$26,985,331

	MANDATE FUNDING			INCENTIVE FUNDING				
$ CAP PER DIVERTED TON	NO.OF MUNS. MARG.$ < CAP	POP/ (% OF CURBSIDE)	STATE $	NO.OF MUNS. MARG.$ > CAP	POP.	STATE $	LOCAL $	TOTAL POTENTIAL STATE $
$25	3	181,007 (4%)	$274,182	155	4,603,466 (96%)	$14,385,834	$12,325,315	$14,660,016
$35	63	1,529,736 (32%)	5,598,801	95	3,254,737 (68%)	14,239,475	7,147,055	19,838,276
$45	101	3,097,462 (65%)	13,115,357	57	1,687,011 (35%)	9,489,437	4,380,537	22,604,794
$55	111	3,434,900 (72%)	15,300,608	47	1,349,573 (28%)	9,278,315	2,406,408	24,578,923
$65	121	3,918,269 (82%)	18,865,740	37	866,204 (18%)	7,037,908	1,081,683	25,903,648
$75	142	4,352,019 (91%)	22,726,623	16	432,454 (9%)	4,054,257	204,451	26,780,880
$85	157	4,780,552 (100%)	26,937,744	1	3,921 (0%)	41,661	5,926	26,979,405

Figure 9D

Estimated Marginal Cost of Recycling for 158 Curbside Municipalities

@ 130/TON RECYCLING COST =$30,573,686

	MANDATE FUNDING			INCENTIVE FUNDING				
$ CAP PER DIVERTED TON	*NO.OF MUNS. MARG.$ < CAP*	*POP/ (% OF CURBSIDE)*	*STATE $*	*NO.OF MUNS. MARG.$ > CAP*	*POP.*	*STATE $*	*LOCAL $*	*TOTAL POTENTIAL STATE $*
$25	2	137,303 (3%)	$242,814	156	4,647,170 (97%)	$14,522,408	$15,808,464	$14,765,222
$35	14	324,456 (7%)	1,003,570	144	4,460,017 (93%)	19,512,574	10,057,542	20,516,144
$45	84	2,259,274 (47%)	10,675,759	74	2,525,199 (53%)	14,204,245	5,693,682	24,880,004
→ $55	101	3,097,462 (65%)	15,438,452	57	1,687,011 (35%)	11,598,201	3,537,033	27,036,653
$65	120	3,748,510 (78%)	20,358,053	38	1,035,963 (22%)	8,417,199	1,798,434	28,775,252
$75	123	3,970,914 (83%)	22,285,433	35	813,559 (17%)	7,627,115	661,138	29,912,548
$85	153	4,589,549 (96%)	28,446,523	5	194,924 (4%)	2,071,067	56,096	30,517,590
$95	157	4,780,552 (100%)	30,523,158	1	3,921 (0%)	46,562	3,966	30,569,720

Figure 9E

RECOMMENDATIONS

As a result of our findings, we recommend:

1) That any mandatory recycling program initiated by the Commonwealth be funded sufficiently to prevent any adverse impact on local budgets. Based on our study, up to $30 million per year over the next few years would be necessary.
2) If adequate state funding is not available, that the Commonwealth establish a voluntary program with state funding incentives. Our report shows the impact of partial state funding proposals and demonstrates the levels of participation that could be achieved at various levels of state funding.

Table of Calculations for Figure 6

Estimated Solid Waste Cost Increase with Recycling

	ESTIMATED SOLID WASTE COSTS WITHOUT RECYCLING			ESTIMATED SOLID WASTE COSTS WITH RECYCLING				MARGINAL COSTS		
RECYCLING COST PER TON	(A) COLLECTION AND HAULING COST	(B) TIP COST	(A+B) TOTAL COST WITHOUT RECYC. AND COMPOSTING	(C) RECYCLING COST	(D) COMPOSTING COST	(E) REMAINING SOLID WASTE COST	(C+D+E) TOTAL COST WITH RECYCLING AND COMPOSTING	(C+D+E)–(A+B) NET MARGINAL COST	MANDATED MARGINAL COST	% CHANGE
$90	$83,297,875	$122,667,696	206,165,571	$32,295,193	$15,006,500	$175,104,145	$222,405,838	$16,220,267	$16,369,383	7.95%
$100	83,297,675	122,867,896	206,165,571	35,683,546	15,006,500	175,104,145	225,994,193	19,808,622	19,674,740	9.64%
$110	83,297,675	122,867,896	206,165,571	39,471,903	15,006,500	175,104,145	229,562,546	23,398,977	23,396,977	11.35%
$120	83,297,875	122,867,898	206,165,571	43,060,257	15,008,500	175,104,145	233,170,902	26,985,331	26,985,331	13 09%
$130	83,297,675	122,867,896	206,165,571	46,648,612	15,006,500	175,104,145	238,759,257	30,573,686	30,573,868	14.83%

ASSUMPTIONS.

1. TOTAL TONS BASED ON .50 x POPULATION (APPROX. 2,392,237 TONS.)
2. RECYCLING DIVERSION RATE – 15%. (APPROX. 358,835 TONS.)
3. COMPOST DIVERSION RATE – 10%. (APPROX. 239,224 TONS.)
4. SOLID WASTE COLLECTION AND HAULING HELD CONSTANT @ $34.82 PER TON.
5. COMPOST COST – $62.73 PER TON.
6. 88 OF 158 TIPPING FEES BASED ON DLM RESEARCH – REMAINDER FROM DEP.

NOTE.* MANDATE COST @ $90 AND $100 RECYCLING LEVELS DOES NOT INCLUDE MARGINAL SAVINGS.

STATUTES AFFECTING THE DIVISION OF LOCAL MANDATES

THE MASSACHUSETTS GENERAL LAWS: CHAPTER 11, SECTION 6B

Powers and Duties

The Division of Local Mandates

The division of local mandates, as provided for in section six of this chapter, shall have the responsibility of determining to the best of its ability and in a timely manner the estimated and actual financial effects on each city and town of laws, and rules and regulations of administrative agencies of the commonwealth either proposed or in effect, as required under section twenty-seven C of chapter twenty-nine of the General Laws.

The division shall have the power to require the chief officer of any appropriate administrative agency of the commonwealth to supply in a timely manner any information determined by the division to be necessary in the determination of local financial effects under said section twenty-seven C. The chief officer shall convey the requested information to the division with a signed statement to the effect that the information is accurate and complete to the best of his ability.

The division when requested under the provisions of subsections (d) and (f) of said section twenty-seven C, shall update its determination of financial effects based on either actual cost figures or improved estimates or both.

The division shall review every five years those laws and administrative regulations which have a significant financial impact upon cities or towns. For the purposes of this section “significant financial impact” is defined as requiring municipalities to expand existing services, employ additional personnel, or increase local expenditures. Said division shall determine the costs and benefits of each such law and regulation, and submit a report to the general court of each session together with its recommendation, if any, for the continuation, modification or elimination of such law or regulation.

THE MASSACHUSETTS GENERAL LAWS: CHAPTER 29, SECTION 27C

The Local Mandate Law

27C. Certain laws, rules, etc. relating to costs or assessments effective only by vote of acceptance or appropriation; written notice requesting determination; class actions

Nothwithstanding any provision of any special or general law to the contrary:

(a) Any law taking effect on or after January first, nineteen hundred and eighty-one, imposing any direct service or cost obligation upon any city or town shall be effective in any city or town only if such law is accepted by vote or by the appropriation of money for such purposes, in the case of a city by the city council in accordance with its charter, and in the case of a town by a town meeting, unless the general court, at the same session in which such law is enacted, provides by general law and by appropriation, for the assumption by the commonwealth of such cost, exclusive of incidental local administration expenses and unless the general court provides by appropriation in each successive year for such assumption.

(b) Any law taking effect on or after January first, nineteen hundred and eighty-one granting or increasing exemptions from local taxation shall be effective in any city or town only if the general court, at the same session in which such law is enacted, provides by general law and by appropriation for payment by the commonwealth to each city and town of any loss of taxes resulting from such exemption.

(c) Any administrative rule or regulation taking effect on or after January first, nineteen hundred and eighty-one, which shall result in the imposition of additional costs upon any city or town shall not be effective until the general court has provided by general law and by appropriation for the assumption by the commonwealth of such cost, exlusive of incidental local administration expenses, and unless the general court provides by appropriation in each successive year for such assumption.

(d) Any city or town, any committee of the general court, and either house of the general court by a majority vote of its members, may submit written notice to the division of local mandates, established under section six of chapter eleven of the general laws, requesting that the division determine whether the costs imposed by the commonwealth by any law, rule or regulation subject to the provisions of this section have been paid in full by the commonwealth in the preceding year and, if not, the amount of any deficiency in such payments. The division shall make public its determination within sixty days after such notice.

(e) Any city or town, or any ten taxable inhabitants of any city ot town may in a class action suit petition the superior court alleging that under the provisions of subsection (a), (b), and (c) of this section with respect to a general or special law or rule or regulation of any administrative agency of the commonwealth under which any city or town is required to expend funds in anticipation of reimbursement by the commonwealth, the amount necessary for such reimbursement has not been included in the general or any special appropriation bill for any year. Any city or town, or any ten taxable inhabitants of any city or town may in a class action suit petition the superior court alleging that under the provisions of subsections (a), (b), and (c) of this section with respect to any general or special law, or rule or regulation of any administrative agency of the commonwealth which imposes additional costs on any city or town or which grants or increases exemptions from local taxation, the amount necessary to reimburse such city or town has not been included in the general or any special appropriation bill for any year. The determination of the amount of deficiency provided by the division of local mandates under subsection (d) of this section shall be prima facie evidence of the amount necessary. The superior court shall determine the amount of the deficiency, if any, and shall order that the said city or town be exempt from such general or special law, or rule or regulation of any administrative agency until the commonwealth shall reimburse such city or town the amount of said deficiency or additional costs or shall repeal such exemption from local taxation.

(f) Any of the parties permitted to submit written notice to the division of local mandates under subsection (d) of this section may submit written notice to the division requesting that the division determine the total annual financial effect for a period of not less than three years of any proposed law or rule or regulation of any administrative agency of the commonwealth. The division shall make public its determination within sixty days of such notice.

(g) Notwithstanding the provisions of subsection (a), (b) and (c), any city or town shall be allowed to accept the provision of any law, rule or regulation specified by said subsections whether or not such law, rule, or regulation is funded by the commonwealth.

The provisions of this section shall not apply to any costs to cities and towns or exemptions to local taxation resulting from a decision of any court of competent jurisdiction, or to any law, rule or regulation enacted or promulgated as a direct result of such a decision.